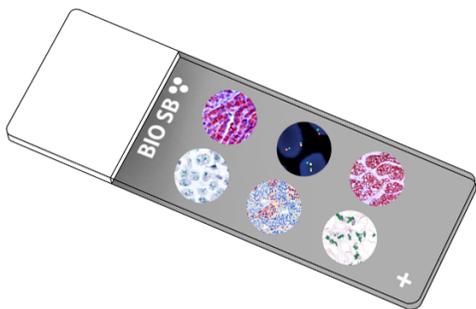


CD73/NT5E Control Slides



Intended Use

For In Vitro Diagnostic Use.

Summary and Explanation

Ecto-5'-nucleotidase (NT5E), or also known as CD73, encoded by the NT5E gene on the human chromosome 6q14.3, is a dimer of two identical 70 kDa subunits. The mature form of CD73 has a molecular weight of 61 kDa. As a plasma membrane protein and expressed in various cell types, CD73 hydrolyzes extracellular adenosine monophosphate into adenosine and inorganic phosphate. It performs homeostatic functions and plays an important role in immunity and inflammation. In cells of the immune system, CD73, in combination with CD39, serves as an immunological switch that turns the cell activity from pro-inflammatory toward anti-inflammatory, which is mediated by adenosine.

In a study that analyzed several publications conducting IHC analysis, CD73 overexpression was found to be associated with several types of human cancers including Bladder, Brain, Invasive Lobular Breast, Esophageal, Gastric, Pancreatic, Rectal mucinous, Renal Cell, Lung Large Cell, oral cavity Squamous Cell, Melanoma, and Lung Adenocarcinoma Cancers. Studies also found that lymph node metastases correlated with high CD73 expression. One study investigated CD73 in Non-Small Cell Lung Cancer tissues by IHC and found that CD73 expression is frequently higher in Non-Small Cell Lung Cancer tissue, compared to normal tissue, which indicates the prognostic value of CD73 in the tumorigenesis of Non-Small Cell Lung Cancer. Another study revealed the prognostic potential of CD73 as a biomarker in Breast Cancer, since CD73 is associated with cancer cell invasion, migration and lymph node metastasis. Other studies showed a positive correlation between CD73 expression with Colorectal Cancer malignancy, and metastatic Melanomas.

Presentation

Five slides of CD73/NT5E positive tissues, each mounted on Hydrophilic Plus Slides, provided in a plastic mailer.

<i>Catalog No.</i>	<i>Quantity</i>
BSB-9108-CS	5 slides
BSB-3716-CS	5 slides

Storage Store at 20-25°C

Precautions

1. For professional users only. Results should be interpreted by a qualified medical professional.
2. Ensure proper handling procedures are used with this reagent.
3. Always wear personal protective equipment such as a laboratory coat, goggles, and gloves when handling reagents.
4. Dispose of unused solution with copious amounts of water.
5. Follow safety precautions of the heating device used for epitope retrieval (TintoRetriever Pressure Cooker or similar).
8. For additional safety information, refer to Safety Data Sheet for this product.
9. For complete recommendations for handling biological specimens, please refer to the CDC document, "Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories" (see References in this document).

Stability

This product is stable up to the expiration date on the product label.

Do not use after expiration date listed on package label.

IHC Protocol

1. Subject tissues to heat induced epitope retrieval (HIER) using a suitable retrieval solution such as ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023) or EDTA (BSB 0030-BSB 0033).

2. Any of three heating methods may be used:

a. TintoRetriever Pressure Cooker or Equivalent

Place tissues/slides in a staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA and place on trivet in the pressure cooker. Add 1-2 inches of distilled water to the pressure cooker and turn heat to high. Incubate for 15 minutes. Open and immediately transfer slides to room temperature.

b. TintoRetriever PT Module or Water Bath Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA at 95°-99° C. Incubate for 30-60 minutes.

c. Conventional Steamer Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA in a steamer, cover and steam for 30-60 minutes.

3. After heat treatment, transfer slides in ImmunoDNA Retriever with Citrate or EDTA to room temperature and let stand for 15-20 minutes.
4. For manual staining, perform antibody incubation at ambient temperature. For automated staining methods, perform antibody incubation according to instrument manufacturer's instructions.
5. Wash slides with ImmunoDNA washer or DI water.
6. Continue IHC staining protocol. Wash slides between each step with ImmunoDNA washer solution.

Abbreviated Immunohistochemical Protocol

Step	ImmunoDetector AP/HRP	PolyDetector AP/HRP	PolyDetector Plus HRP
Peroxidase/AP Blocker	5 min.	5 min.	5 min
Primary Antibody	30-60 min.	30-60 min.	30-60 min.
1st Step Detection	10 min.	30-45 min.	15 min.
2nd Step Detection	10 min.	Not Applicable	15 min.
Substrate- Chromogen	5-10 min.	5-10 min.	5-10 min.
Counterstain / Coverslip	Varies	Varies	Varies

Abbreviated IF Protocol

Step	Incubation Time
Rinse slides in IF wash buffer	5 minutes
Drain and wipe excess IF wash buffer off slide	
Conduct remaining steps in the dark	
Apply Antibody	30-60 minutes
Rinse with 3 changes of IF wash buffer	3x15 minutes each
Coverslip with IF mounting medium	

Mounting Protocols

For detailed instructions using biodegradable permanent mounting media such as XyGreen PermaMunter (BSB 0169-0174) or organic solvent based resin such as PermaMunter (BSB 0094-0097), refer to PI0174 or PI0097.

Product Limitations

Due to inherent variability present in immunohistochemical procedures (including fixation time of tissues, dilution factor of antibody, retrieval method utilized, and incubation time), optimal performance should be established through the use of positive and negative controls. Results should be interpreted by a qualified medical professional.

References

- NT5E 5'-nucleotidase ecto [Homo sapiens (human)]. <https://www.ncbi.nlm.nih.gov/gene/49072>. Antonioli L, Pacher P, Vizi ES, Haskó G. CD39 and CD73 in immunity and inflammation. Trends Mol Med. 2013;19(6):355-367. doi:10.1016/j.molmed.2013.03.0053. Kordaš T, Osen W, Eichmüller SB. Controlling the Immune Suppressor: Transcription Factors and MicroRNAs Regulating CD73/NT5E. Front Immunol. 2018;9:813. Published 2018 Apr 18. doi:10.3389/fimmu.2018.008134. Wu R, Chen Y, Li F, et al. Effects of CD73 on human colorectal cancer cell growth in vivo and in vitro. Oncol Rep. 2016;35(3):1750-1756. doi:10.3892/or.2015.45125. Monteiro I, Vigano S, Faouzi M, et al. CD73 expression and clinical significance in human metastatic melanoma. Oncotarget. 2018;9(42):26659-26669. Published 2018 Jun 1. doi:10.18632/oncotarget.254266. Jiang T, Xu X, Qiao M, et al. Comprehensive evaluation of NT5E/CD73 expression and its prognostic significance in distinct types of cancers. BMC Cancer. 2018;18(1):267. Published 2018 Mar 7. doi:10.1186/s12885-018-4073-77. Zhu J, Zeng Y, Li W, et al. CD73/NT5E is a target of miR-30a-5p and plays an important role in the pathogenesis of non-small cell lung cancer. Mol Cancer. 2017;16(1):34. Published 2017 Feb 3. doi:10.1186/s12943-017-0591-18. Zhi X, Wang Y, Yu J, et al. Potential prognostic biomarker CD73 regulates epidermal growth factor receptor expression in human breast cancer. IUBMB Life. 2012;64(11):911-920. doi:10.1002/iub.10869. U.S. Department of Health and Human Services: Centers for Disease Control and Prevention. Guidelines for Safe WorkPractices in Human and Animal Medical Diagnostic Laboratories. Supplement / Vol. 61, January 6, 2012. <https://www.cdc.gov/mmwr/pdf/other/su6101.pdf>

Symbol Key / Légende des symboles/Erläuterung der Symbole

EC REP	QAdvis EAR AB Ideon Science Park Scheelevägen 17 SE-223 70 Lund, Sweden	 Storage Temperature Limites de température Zulässiger Temperaturbereich	 Manufacturer Fabricant Hersteller	REF	Catalog Number Référence du catalogue Bestellnummer
IVD	In Vitro Diagnostic Medical Device Dispositif médical de diagnostic in vitro In-Vitro-Diagnostikum	 Read Instructions for Use Consulter les instructions d'utilisation Gebrauchsanweisung beachten	 Expiration Date Utiliser jusque Verwendbar bis	LOT	Lot Number Code du lot Chargenbezeichnung